

06- DEPARTMENT OF ENVIRONMENTAL PROTECTION

096 BUREAU OF AIR QUALITY CONTROL

**CHAPTER 123: PAPER COATING REGULATION**

**SUMMARY:** This regulation establishes consistent requirements for testing, evaluating and limiting volatile organic compound emissions from paper coaters.

1. Applicability

- A. This regulation shall be applicable in all ambient air quality regions of the State of Maine.
- B. This regulation shall apply to roll, knife, meyer rod or rotogravure coater(s) and drying oven(s) of paper coating lines at stationary sources of volatile organic compounds.

2. Definitions

- A. Applied solids. "Applied solids" means solids which remain on the substrate being coated or painted.
- B. Capture system. "Capture system" means the equipment, including hoods, ducts, fans, etc. used to contain, capture, or transport a pollutant to control device.
- C. Coating. "Coating" means a protective, functional or decorative film applied in a thin layer to a surface. This term often applies to paints such as lacquers or enamels, but also is used to refer to films applied to a paper, plastics, or foil.
- D. Coating line. "Coating line" means one or more apparatus operations which include a coating applicator, flash-off area, and/or oven wherein a surface coating is applied, dried, and/or cured.
- E. Knife coating. "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.
- F. Oven. "Oven" means a chamber within which heat is used to bake, cure, polymerize, and/or dry a surface coating.

G. Paper coating. "Paper coating" means coatings put on paper and pressure sensitive tapes regardless of substrate. Related web coating processes on plastic film and decorative, protective or functional coatings on metal foil are included in this definition.

H. Roll coating. "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

I. Rotogravure coating. "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is picked up in these recessed areas and is transferred to the substrate.

J. Substrate. "Substrate" means the surface to which a coating is applied.

3. Emission Limitations.

The owner or operator of a paper coating line subject to this regulation must comply with one of the following limitations:

A. Low Solvent Content Coating Technology.

The owner or operator of a paper coating line subject to this regulation shall not cause, allow or permit the discharge into the atmosphere from any coating volatile organic compounds (VOC) in excess of 2.9 pounds of VOC per gallon of coating (excluding water and negligibly reactive VOC as defined in the definition of VOC in Chapter 100 of these regulations), delivered to the coating applicator from a paper coating line. Any averaging of emission limits to meet this emission limit must comply with EPA's Emission Trading Policy Statement published on December 4, 1986 (51 FR 43814) and must be approved by the Department and EPA.

B. Add-On Air Pollution Control Device.

The owner or operator of a paper coating line subject to this regulation which is controlled by an add-on air pollution control device shall operate the add-on control device at all times the paper coating line is operating such that the overall efficiency of the abatement equipment (the efficiency of the capture system multiplied by efficiency of the control device) reduces the VOC emissions to a rate equal to 4.8 pounds VOC emitted per gallon of solids applied to the substrate on a continuous basis. For incineration or other types of control devices, the averaging period to determine compliance with EPA Reference Method 25 is three hours, and for carbon adsorption the averaging period to determine compliance with EPA Reference Method 25 is the length of the adsorption cycle or 24 hours, whichever is less.

4. Test Methods

A. The owner or operator of any paper coating line subject to this regulation shall, at his own expense, demonstrate compliance using the methods in 4(C) and 4(D) below. All tests shall be made by, or under the direction of a person qualified by training and/or experience in the field of air pollution testing.

B. No results from volatile organic compound emissions compliance testing will be accepted as a compliance demonstration, nor the results accepted, unless prior notification has been supplied to the Department and the Department has granted approval. Any person proposing to conduct a volatile organic compound emissions test shall notify the Department of the intent to test not less than 30 days before the proposed initiation of the tests so the Department may at its option observe the test.

C. For determining the volatile content of surface coatings, the applicant shall use EPA Reference Method 24, or any other method approved by the Commissioner and EPA. When determining the volatile fraction of a coating using EPA Reference Method 24, or any other method approved by the Commissioner and EPA; the bake time must be one hour. For determining the percent solids by volume of a coating, until an applicable EPA Reference Method is promulgated, the source shall use the manufacturer's formulation data.

D. For determining the volatile organic compound emission control system efficiency, the applicant shall determine the removal efficiency of the control device using EPA Reference Method 18, 25, 25A, or 25B or any other method approved by the Commissioner and EPA. For incineration or other types of control devices, the averaging period to determine compliance with EPA Reference Method 25 is three hours, and for carbon adsorption the averaging period to determine compliance with EPA Reference Method 25 is the length of the adsorption cycle or 24 hours, whichever is less. The applicant shall determine the capture efficiency using any method approved by the Commissioner and EPA method.

5. Recordkeeping and Reporting

A. Within 60 days from the effective date of this regulation, the source shall submit the following information to the Department for each coating line subject to this regulation:

1. Coating line number
2. Hours of operation per day and per year
3. Method of application

4. Number and types of coats applied to substrate
5. Drying method
6. Substrate type

The source shall submit revised information to the Department whenever it makes changes to the coating line.

B. Within 60 days from the effective date of this regulation, the source shall submit the following information to the Department for each coating:

1. Supplier name
2. Name of coating
3. Identification number for coating
4. Coating density (lb/gal)
5. Total volatiles content of coating as supplied (wt %)
6. Water content of coating as supplied (wt %)
7. Exempt solvent content\*\* of coating as supplied (wt %)
8. Solids content of coating as supplied (vol %)
9. Name of diluent, if any
10. Identification number of diluent
11. Diluent solvent density (lb/gal)
12. VOC content of diluent (wt %)
13. Exempt solvent content\*\* of diluent (wt %)
14. Diluent/solvent ratio (gal diluent solvent/gal coating)

\*\* (solvents considered negligibly reactive as contained in the definition of VOC in Chapter 100)

The source shall also record the information in numbers 10 through 14 above for any diluents and solvents used for clean-up operations.

The source shall submit revised information to the Department whenever it purchases a new coating, diluent, or solvent.

C. The source shall keep the following records on site for each coating line on a daily basis:

1. Coating line number
2. Time period
3. Coating identification number
4. Amount of coating used
5. Diluent identification number
6. Amount of diluent used

The source shall also record the information in numbers 5 and 6 above for any diluents and solvents used for clean-up operations.

D. Copies of all records and reports required by this regulation must be kept at the source for a minimum period of two years. These records shall be available during normal business hours and copies provided to the Commissioner or his representative upon request.

6. Additional Recordkeeping and Reporting for Sources with Add-on Air Pollution Control Device

A. Within 60 days from the effective date of this regulation, the source shall submit the following information to the Department for each control device:

1. Control device identification number and model number
2. Manufacturer
3. Installation date
4. Coating line(s) controlled

5. Whether or not the control device always is in operation when the line(s) it is serving is in operation
6. Type of control device
7. Destruction or removal efficiency
8. Date tested (If not tested, method of determining destruction efficiency)
9. For thermal incinerators - design combustion temperature (°F)
10. For catalytic incinerators - design exhaust gas temperature (°F), design temperature rise across catalyst bed (°F), anticipated frequency of catalyst change
11. For a condenser - design inlet temperature of cooling medium (°F), design exhaust gas temperature (°F)
12. For a carbon adsorber - design pressure drop across the adsorber, VOC concentration at breakthrough
13. Emission test results - inlet VOC concentration (ppm), outlet VOC concentration (ppm), method of concentration determination, date of determination
14. Type and location of capture system
15. Capture efficiency (%)
16. Method of determining capture efficiency

B. The source shall continuously monitor and record the following parameters:

1. For thermal incinerators - exhaust gas temperature (°F)
2. For catalytic incinerators - exhaust gas temperature (°F), temperature rise across catalyst bed (°F)
3. For condensers - inlet temperature of cooling medium (°F), exhaust gas temperature (°F)
4. For carbon adsorbers - pressure drop across the adsorber, VOC concentration for breakthrough

C. For catalytic incinerators, the source shall record the date of last change of catalyst in the bed.

D. Copies of all records and reports required by this regulation must be kept at the source for a minimum period of two years. These records shall be available during normal business hours and copies provided to the Commissioner or his representative upon request.

7. Compliance Schedule.

The owner or operator of any paper coating line subject to this regulation shall achieve final compliance with this regulation before 1 year from the effective date of this regulation.

**BASIS STATEMENT :** Portions of the State of Maine exceed both the state and federal ambient air quality standard for ozone. Volatile organic compounds (VOC) are a precursor in the formation of ozone. As part of Maine's State Implementation Plan for Air Quality the state reduced VOC emissions from paper coater sources through their air emission license. This regulation ensures that all paper coater sources are treated consistently and will codify paper coater requirements for future sources. Comments from the U.S. Environmental Protection Agency suggested minor changes to ensure consistency with EPA's model regulation.

AUTHORITY: 38 M.R.S.A. 343-A and 585-A

EFFECTIVE DATE: October 3, 1989